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- 1 - DT01 Rec'd PCT/PIC 14 JAN 2005

AN INTEGRATED PULLEY-TORSIONAL DAMPER ASSEMBLY

TECHNICAL FIELD

5 The present invention relates to an integrated pulley-torsional damper assembly.

BACKGROUND ART

Integrated pulley-torsional damper assemblies are known, which comprise a hub designed for being rigidly 10 connected to a drive member, for example the drive shaft of an internal-combustion engine, a pulley connected to the hub by means of a first ring made of elastomeric material having the function of filter for torsional oscillations, and a inertia ring, connected to the hub 15 by means of a second ring made of elastomeric material, which defines with the inertia ring a damping system.

Integrated assemblies of the type described briefly above are used, for instance, in the automotive sector and are connected, at one end of the drive shaft of an 20 internal-combustion engine, to enable driving, by means of a belt transmission, of auxiliary members of the engine, for example, an alternator, a fan and/or a compressor, and enable, at the same time, damping of the torsional oscillations of the drive shaft.

25 US-A-5 637 041 discloses an integrated pulley-torsional damper assembly having the features of the

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preamble of claim 1.

DISCLOSURE OF INVENTION

The purpose of the present invention is to provide an integrated pulley-damper assembly of an improved type, which has a particularly small number of components and presents contained axial dimensions.

The aforesaid purpose is achieved by an integrated pulley-torsional damper assembly as claimed in claim 1.

BRIEF DESCRIPTION OF THE DRAWING

10 For a better understanding of the present

## CLAIMS

1. An integrated pulley-torsional damper assembly including a hub (2) designed for being rigidly connected to a drive member (3), a pulley (4) connected to the hub (2) by means of a first elastomeric ring (5) having the function of a filter for torsional oscillations, an inertia ring (6) connected to the hub (2) by means of a second elastomeric ring (7) defining with the inertia ring (6) a damping system, said hub (2) comprising an internal annular flange (10) designed for connection to said drive member (3), said hub (2) comprising, integrally with said internal annular flange (10), an annular coupling portion (14) having a substantially C-shaped cross section, which is open axially on the side where said internal annular flange (10) is located and forms a cavity (9), said coupling portion (14) comprising an outer tubular wall (12), on which said second elastomeric ring (7) is fitted, a bearing (34) being set between said outer tubular wall (12) and said pulley (4) for radial and axial support of said pulley (4) with respect to said hub (2), said pulley (4) comprising a peripheral crown (15) and a flange (17) extending radially inwards from said peripheral crown (15), said flange (17) comprising an outer annular portion (19), an intermediate tubular wall (20) coaxial

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with respect to said crown (15) and internal thereto, characterized by comprising a coupling flange (25) provided with an inner annular wall (26) bearing axially against said flange (10) of said hub (2) and with a peripheral annular edge (27), and in that said flange (17) of said pulley (4) includes an inner annular flange (21) extending from an axial end of the tubular wall (20) opposite to the outer annular portion (19), said first elastomeric ring (5) being set axially between said inner annular flange (21) of said pulley (4) and said peripheral annular edge (27) of said coupling flange (25), and forming a single body with them; said inertia ring (6) being contained inside said crown (15) of said pulley (4), said first elastomeric ring (5) being housed within said cavity (9) of said annular coupling portion (14).

2. The assembly according to Claim 1, characterized in that said bearing (34) comprises integrally a tubular portion (35), radially set between said outer tubular wall (12) of said hub (2) and said intermediate tubular wall (20) of said pulley (4), and a flange (36) axially set between said outer annular portion (19) of said flange (17) of said pulley (4) and said outer tubular wall (12) of said hub (2).